

WHAT IS CLAIMED IS:

1. A method of manufacturing a glass substrate for a storage medium by arranging and pressing a glass material  
5 between an upper die and a lower die to form a glass substrate, said method comprising:

a heating step of heating said glass material remaining arranged between said upper die and said lower die;

a pressing step of pressing said heated glass material  
10 via said upper and lower dies to precisely transfer molding surfaces of said upper and lower dies to the glass material to form a desired substrate; and

a cooling step of having, after said pressing step, a cooling member contact said upper and lower dies,  
15 respectively, to cool said dies with said molded glass material remaining arranged between said upper die and said lower die, and

wherein during said heating step and said pressing step, a vacuum atmosphere is maintained in a space containing  
20 said dies and said glass material, and wherein when said pressing step has completed, an inert gas is filled in said space to set a pressure in said space equal to an ambient pressure, before said cooling step is executed.

25 2. A method of manufacturing a glass substrate for a storage medium as claimed in claim 1, wherein said cooling step includes a step of pressurizing said glass material

via said upper die and said lower die until the temperature of said glass material drops to reach its glass transition point.

5           3. A glass substrate for a storage medium manufactured by the method as claimed in claim 1.

          4. A storage medium comprising a glass substrate as claimed in claim 3.

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          5. An apparatus for manufacturing a glass substrate for a storage medium by arranging and pressing a glass material between an upper die and a lower die to form a glass substrate, said apparatus comprising:

15           heating means for heating said glass material remaining arranged between said upper die and said lower die;

          pressing means for pressing said heated glass material via said upper and lower dies to precisely transfer molding surfaces of said upper and lower dies to the glass material to form a desired substrate;

20           cooling means for having a cooling member contact said upper and lower dies so as to perform cooling of said molded glass material remaining arranged between said upper and lower dies;

25           accommodating means for accommodating said upper and lower dies, said heating member, and said cooling member;

and

exhausting and gas filling means for exhausting and filling a gas from and into a space formed by said accommodating means,

5 wherein said exhaust and gas filling means exhausts the gas until said pressing means is used to form a closed space for molding between said upper die and said lower die, and after said pressing means has been used to form the closed space for molding between said upper die and  
10 said lower die, an inert gas is filled in said space to set a pressure in said space equal to an ambient pressure, and

wherein said cooling means cools said glass material after the inert gas is filled in said space to set the pressure  
15 in said space equal to the ambient pressure.

6. An apparatus for manufacturing a glass substrate for a storage medium as claimed in claim 5, wherein said cooling means comprises an upper and lower water cooling  
20 jackets that can selectively contact with, and separate from, surfaces of the upper and lower dies, respectively, which surfaces are opposite to said molding surfaces, and

wherein said cooling is performed by having said upper and lower water cooling jackets contact the surfaces of  
25 said upper and lower dies, respectively, which surfaces are opposite to said molding surfaces.

7. An apparatus for manufacturing a glass substrate for a storage medium as claimed in claim 5, wherein said heating means includes a radiating heater arranged around said upper and lower dies.

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8. A glass substrate for a storage medium manufactured by the apparatus as claimed in claim 5.

9. A storage medium comprising a glass substrate as  
10 claimed in claim 8.